

NOMENCLATURAL NOTES AND LECTOTYPES IN THE *ALLOCARYA* SECTION OF *PLAGIOBOTHRYDS*

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ABSTRACT

The history of the combination *Plagiobothrys figuratus* (Piper) I. M. Johnst. ex M. Peck is explained, and *P. figuratus* var. *corallicarpus* (Piper) K. L. Chambers is proposed to replace an earlier combination at the subspecific rank. In the *Plagiobothrys scouleri* (Hook. & Arn.) I. M. Johnst. complex, the following are recognized as separate species for treatment in the Oregon Flora Checklist: *P. scouleri*, *P. reticulatus* (Piper) I. M. Johnst., *P. bracteatus* (Howell) I. M. Johnst., and *P. hispidulus* (Greene) I. M. Johnst.. *Plagiobothrys cusickii* (Greene) I. M. Johnst. is made a synonym of the latter taxon. Lectotypes are provided for *Allocarya bracteata* Howell, *A. cusickii* var. *vallicola* Jeps., *A. charaxata* var. *debilis* Brand, *A. commixta* Brand, and *A. piperi* Brand.

Key Words: *Allocarya*, Boraginaceae, lectotype, Oregon flora, *Plagiobothrys*.

While preparing the treatment of *Plagiobothrys* for the Oregon Flora Checklist, I encountered several nomenclatural anomalies involving *P. figuratus* and members of the *P. scouleri* complex. The following notes attempt to resolve these problems and to point out the need for further taxonomic study of these species. Because of the lack of useful biosystematic information on *Plagiobothrys*, I have employed a classical taxonomic approach, with principal emphasis on outlet morphology of the included taxa.

*PLAGIOBOTHRYDS FIGURATUS*

This taxon, Fig. 1A, is the common large-flowered *Plagiobothrys* species of western Oregon and adjacent Washington, whose range extends south to Curry County where the original type specimen was collected. The combination *P. figuratus* (Piper) I. M. Johnst. was published by Morton Peck (1941, p. 609), hence the authorities are usually cited as “I. M. Johnst. ex M. Peck.” Neither in this first edition of his Manual nor in the second, posthumous edition (1961, p. 661) did Peck cite a basionym for his combination, the only synonym mentioned being “*Allocarya scouleri* Greene”. Knowledge of pertinent prior literature is needed to trace the basionym, *Allocarya figurata* Piper (1920, p. 101). The rule requiring a clear indication of the name-bringing basionym, with place and date of publication, to validate a new combination of a previously published epithet dates only from January 1, 1953 (J. Lanjouw et al. 1952, p. 27). Hence, *Plagiobothrys figuratus*, as published by Peck, is a valid name. In his most recent paper on *Plagiobothrys* before 1941, Johnston (1935, p. 193) had treated *A. figurata* as a variety of *P. hirtus* (Greene) I. M. Johnst.. The reason that

Peck, in 1941, attributed a new combination at the species rank to Johnston is probably a letter that Johnston had sent to him, dated October 3, 1939 (on file at Oregon State University), alluding to a Peck collection of *P. hirtus* with the following statement, quoted verbatim:

These collections are very interesting. They clearly represent this poorly understood species. I now am inclined to believe that the common forms of the old *Allocarya Scouleri* aucts. should be separated from *P. hirtus*. If this is done, your plant of the Willamette Valley will have to be called *Allocarya figuratus* (sic!) Piper. You will recall that the type of *Scouleri*, which I examined at Kew, turned out to be different from the plant to which Gray applied the name.

Previously (Chambers 1989) I called attention to the fact that the southwestern Oregon taxon described by Piper as *Allocarya corallicarpa* (see Addenda), which Johnston had made a variety of *P. hirtus* (Johnston 1935, p. 193), is better recognized as a geographical race of *P. figuratus*. Although I selected the subspecific rank for this new combination, I now believe that varietal rank is more consistent with the infraspecific classifications used by other authors (e.g., Johnston 1932, 1935; Cronquist et al. 1984; Dorn 1988, p. 295; Messick 1993). A new combination is proposed in the Addenda.

THE *PLAGIOBOTHRYDS SCOULERI* COMPLEX

As pointed out by T. C. Messick (1993), a number of taxa of *Plagiobothrys* that were recognized as species by I. M. Johnston (1932) appear to form an intergradient group usually referred to as the *P. scouleri* complex. This complex, discussed below, includes *P. bracteatus*,

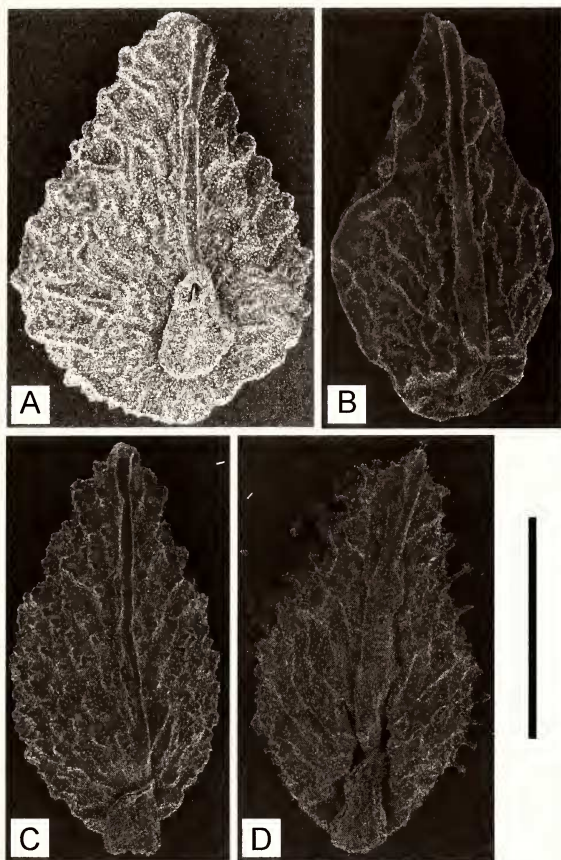


FIG. 1. Nutlets of some species of *Plagiobothrys* in Oregon. A. *P. figuratus* (Piper) I. M. Johnst. ex M. Peck var. *figuratus*. B. *P. bracteatus* (Howell) I. M. Johnst.. C. *P. scouleri* (Hook. & Arn.) I. M. Johnst.. D. *P. hispidulus* (Greene) I. M. Johnst.. Scale = 1 mm.

*P. cognatus*, *P. cusickii*, *P. hispidulus*, *P. reticulatus*, and *P. scouleri*. Johnston's treatment is repeated by Abrams (1951, pp. 557–571, as *Allocarya*) and Messick (1993, pp. 386–390, as *Plagiobothrys*). In the publications of Arthur Cronquist, however (Hitchcock et al. 1959, pp. 236–243; Cronquist et al. 1984, pp. 268–276), the second, third, and fourth names, above—as well as the more eastern taxon *P. scopulorum* (Greene) I. M. Johnst.—are made synonyms of *P. scouleri*, under the varietal epithet var. *penicillatus* (Greene) Cronquist. Dorn (1988) replaced this incorrect varietal name with the priorable autonym var. *hispidulus* Greene, which had been created when Jepson (1925, p. 853) published the combination *Allocarya hispidula* var. *penicillata*.

In the above group of taxa, *Plagiobothrys reticulatus* (Piper) I. M. Johnst. is a coastal species, ranging from the San Francisco Bay area to southwestern Oregon. Its defining trait is that the nutlet's attachment scar and part of the

ventral keel lie in a trough formed by two parallel ridges of the pericarp. This taxon was first named *Myosotis californica* Fisch. & C. A. Mey. (Ind. Sem. Hort. Petrop. 2: 42. 1835), but that epithet cannot be used in *Plagiobothrys* because of the name *P. californicus* Greene, a synonym of *P. collinus* (Philbr.) I. M. Johnst.. Both *P. reticulatus* and *P. bracteatus* are outside the ranges covered in Cronquist's two publications (1959, 1984) and are therefore not mentioned in his treatment of *P. scouleri*. Depending on the degree of development of the nutlet's ventral trough, *P. reticulatus* may intergrade with more inland representatives of the *P. scouleri* complex through its var. *rossianorum* I. M. Johnst. (Johnston 1932, p. 71; Messick 1993).

The first listed taxon, *Plagiobothrys bracteatus* (Howell) I. M. Johnst., is recognized as a widespread taxon in the California Floristic Province, found more inland than *P. reticulatus* (Johnston 1932, pp. 68–71; Abrams 1951, p. 570; Messick 1993, p. 388). It was described by Thomas Howell as *Allocarya bracteata* (1901, pp. 281–282, not “J. Howell” of Messick 1993), mentioning no type but citing the locality: “In wet places, Umpqua Valley Oregon.” Piper (1920, p. 113) placed the name in his list of doubtful species, stating: “There is no specimen in the Howell Herbarium marked *A. bracteata*...nor have any been seen elsewhere.” Johnston (1932, p. 70) also wrote: “The type, unfortunately, appears to have been lost...What is more no isotype has been discovered.” However, in the herbarium of Oregon State University is an authentic collection by Thomas Howell, which can be taken as the lectotype of *Allocarya bracteata* (see Addenda). Of the two plants on the lectotype sheet, the designated plant has better developed, though still immature, nutlets. The label is in Howell's handwriting and bears the name *Krynitzkia californica* Gray. This name, based on *Myosotis californica* Fisch. & C. A. Mey. (type from Fort Ross, Sonoma County), had been broadly used by Gray and others to apply to inland taxa including *P. bracteatus* (Jepson 1943, p. 364, see discussion in synonymy of *Allocarya cusickii* var. *vallicola* Jeps.).

Although limited in Oregon to the southwestern counties, up to the southern Willamette Valley, *Plagiobothrys bracteatus* appears to be widespread and well characterized in California, from the Central Valley and Sierra foothills south to San Diego County and northern Baja California. Its distinctive feature is the scar of the nutlets, which is consistently described as small, oblique-basal, ovate to elliptic or cuneate, and surrounded by an irregular ridge of pericarp tissue. A nutlet of this type, from the northernmost range of the species, is illustrated in Fig. 1B. The synonymy of this species includes four names that require lectotypification. The first of these is

*Allocarya cusickii* var. *vallicola* Jeps., mentioned above. Jepson's publication (1943, p. 364) cites no type collection, only giving a synonymy that includes the names *Krynitzkia californica* Gray "in greater part," *Allocarya californica* Greene "in great part, if not wholly, Great Valley plants," *A. bracteata* Howell, *A. commixta* Brand, and *A. piperi* Brand. A lectotype has been selected from the numerous collections mentioned by Jepson (see Addenda).

Jepson (1943, p. 364) also makes the combination *Allocarya cusickii* var. *debilis* (Brand) Jeps., based on *A. charaxata* var. *debilis* Brand, type: "Californien: Butte County: Chico (Copeland n. 3046, Herb. Berlin)." This and the other Brand holotypes mentioned here were lost in a fire during World War II (R. Vogt, Botanischer Garten und Botanisches Museum Berlin-Dahlem, personal communication). An isotype at UC has been selected as lectotype (see Addenda). I have examined this specimen and believe it represents no more than a growth form of *Plagiobothrys bracteatus*. Also requiring lectotypification are two other Brand names cited by Jepson, above, *A. commixta* and *A. piperi* (see Addenda).

Johnston (1935, p. 192) lectotypified *Myosotis scouleri* Hook. & Arn., the basionym of *Plagiobothrys scouleri* (Hook. & Arn.) I. M. Johnston., with a collection in the Hooker Herbarium at K labeled "N. W. Coast, Dr. Scouler." He hypothesized that Scouler's collection came from northwestern Washington or Vancouver Island, but it might equally well have been from along the Columbia River. Plants common in western Oregon, to which the name *P. scouleri* is being applied here, have nutlets of the type shown in Fig. 1C. The scar is prominent, not surrounded by a ridge of pericarp, and basi-lateral; that is, it is at the end of the nutlet but faces the lateral plane of the ventral surface. In practice, no sharp distinction can be drawn between this type of scar and the oblique-basal one of *P. bracteatus*, and in southwestern Oregon the assignment of specimens to one or the other species may be arbitrary. If *P. bracteatus* were to be reduced to varietal status under *P. scouleri*, the epithet *debilis* of Brand would appear to have priority. However, no such combination is proposed here.

A type of nutlet found very commonly in plants from east of the Cascades in Washington and Oregon, south principally in the Sierra Nevada to the mountains of southern California, is what I recognize as *Plagiobothrys hispidulus* (Greene) I. M. Johnston (Fig. 1D). The scar is near the base of the nutlet but is distinctly lateral (not oblique) in orientation and is usually enclosed in an areole formed by a surrounding ridge of the pericarp. The scar varies in shape, even on individual plants, but is mostly longer than wide, and is concave with spreading

margins. Frequently, however, the scar appears cuneate or linear because the margins bend upward after release from the gynobase, an inconsistent feature that putatively defines the taxon *P. cusickii* (Greene) I. M. Johnston. This and other minor differences in pericarp surface between *P. cusickii* and *P. hispidulus* are too variable to merit species distinction, in my opinion. Thus, I here combine these two entities taxonomically, choosing the epithet *hispidulus* (basionym *Allocarya hispidula* Greene, 1887, p. 17) over the simultaneously published *Allocarya cusickii* Greene.

To what extent the name *Plagiobothrys cognatus* (Greene) I. M. Johnston. (basionym *Allocarya cognata* Greene, 1901, pp. 235-6) applies to plants in the Pacific Coast states is uncertain and requires a more detailed and varied study than is possible from available herbarium specimens. The type came from Cache Valley, Utah. At present, I am not using this name in the Oregon Flora Checklist.

#### ADDENDA

**Plagiobothrys figuratus** (Piper) I. M. Johnston. ex M. Peck var. **corallicarpus** (Piper) K. L. Chambers, *stat. nov.* Based on *Allocarya corallicarpa* Piper, Proc. Biol. Soc. Wash. 37: 93-94. 1924. **Type:** Oregon, Josephine Co., Grants Pass. June 2, 1921. C. V. Piper 5021 (holotype US!; isotypes, GH!, WS!).

**Allocarya bracteata** Howell, Fl. N. W. Amer. 1(5): 481-2. 1901. **Lectotype** here designated: Oregon, Umpqua Valley, April 1887, Thomas Howell s.n. (OSC 61550, the plant at the left).

**Allocarya cusickii** var. **vallicola** Jeps., Fl. Calif. 3(2): 364. 1943. **Lectotype** here designated: California, Napa Co., Napa Valley near Calistoga, May 2, 1897, W. L. Jepson 21,170 (JEPS 60937, annotated with this name by Jepson).

**Allocarya charaxata** var. **debilis** Brand, Engler, Pflanzenz. 4(252), Heft 97: 165. 1931. Isotype here designated as **lectotype:** California, Butte Co., Chico, in dry ditch beds, May 15, 1903, E. B. Copeland 3046, in distribution by C. F. Baker (UC 75319, the plant in upper right corner; **isolectotype:** GH 93309)). These sheets are also **isotypes** of *Allocarya conjuncta* Piper, Contr. U.S. Natl. Herb. 22: 109. 1920, a nomenclatural synonym.

**Allocarya commixta** Brand, Repert. Spec. Nov. Regni Veg. 18: 312. 1922. Isotype here designated as **lectotype:** California, Santa Clara County, Park's Ranch, Mt. Hamilton Range, elevation 2700 ft, April 28, 1908, A. A. Heller 8911 (GH 93308, the third plant from the right, middle row).

**Allocarya piperi** Brand, Repert. Spec. Nov. Regni Veg. 19: 70. 1923. Isotype here designated as **lectotype:** California, Napa County, near Napa, April 25, 1902, A. A. Heller & H. E. Brown 5361 (GH 93605, the plant at the top).

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